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| AT&T CORP.<br>ROOM 2A207<br>ONE AT&T WAY<br>BEDMINSTER, NJ 07921 |             |                      | EXAMINER<br>PATEL, HARESH N |                        |
|  |             |                      | ART UNIT<br>2154            | PAPER NUMBER           |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/782,508

**Applicant(s)**

JAYAWARDENA ET AL.

**Examiner**

Haresh N. Patel

**Art Unit**

2154

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-19 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1-19 are subject to examination. Claim 7 is allowable but objected to.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3-6, 8-13, 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Chesla et al. 20040250124 (Hereinafter Chesla).
4. Referring to claim 1, Chesla discloses an internet service provider (ISP) network comprising: a plurality of routers connected to provide an internet protocol network (IP) (e.g., page 3); a first router, of said plurality of routers, in communication with an internet application, said internet application having a first IP address (e.g., page 3); a black-hole router in communication with said plurality of routers, said black-hole router configured to have a bogus IP address that is same as said first IP address, said bogus IP address having a preference higher than a preference for first IP address (e.g., page 4); wherein either one of said plurality of routers or said black-hole router is configured to inject a black-hole route scheme into a dynamic routing protocol used by said ISP network such that selected ones of said plurality of routers route traffic to said bogus address of said black-hole router (e.g., page 4).

5. Referring to claim 3, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said black-hole route is injected when said internet application is under a Distributed Denial of Service (DDoS) attack (e.g., page 3).

6. Referring to claim 4, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said selected ones of said plurality of routers route traffic to said bogus address via a consistent scheme (e.g., page 3).

7. Referring to claim 5, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said selected ones of said plurality of routers can be changed in real-time by injecting a new black-hole route scheme into said dynamic routing protocol (e.g., page 4).

8. Referring to claim 6, Chesla discloses the claimed limitations rejected as above. Chesla also discloses an internet service provider (ISP) network (e.g., page 3) comprising: a first router in communication with said ISP network (e.g., page 3); an internet application, having a first IP address, in communication with said first router, said first router directing internet traffic to said first IP address of said internet application (e.g., page 3); and a second router, configured to be a black-hole router, in communication with said ISP network, said second router configured to receive internet traffic that was originally addressed to said first IP address (e.g., page 4), but was re-routed through a number of predetermined routers within said ISP network, said predetermined routers being less than all the routers in said ISP network (e.g., page 4).

9. Referring to claim 8, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said internet traffic originally addressed to said first IP address, but rerouted through a number of predetermined routers comprises both attack traffic and legitimate traffic (e.g., page 4).

10. Referring to claim 9, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said attack traffic comprises at least one of PING and SYN messages (e.g., page 5).

11. Referring to claim 10, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said internet traffic addressed to said first IP address, but rerouted through a number of predetermined routers comprises both attack traffic and legitimate traffic (e.g., page 5).

12. Referring to claim 11, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said predetermined routers create consistent routing to said second router (e.g., page 6).

13. Referring to claim 12, Chesla discloses the claimed limitations rejected as above. Chesla also discloses a method of black-holing internet traffic in an ISP network (e.g., page 3), said method comprising: injecting, by a first router, an instruction into said ISP network; responding

to said instruction, by a plurality of routers within said ISP network, such that a first number of routers become black-holing routers and a second number of routers become non-black-holing routers (e.g., page 3); routing internet traffic addressed for a first IP address, by said non-black-holing routers, to an internet application having said first IP address (e.g., page 4); and routing internet traffic addressed for said first IP address, by said black-holing routers, to a black-hole router having said first IP address (e.g., page 4).

14. Referring to claim 13, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said instruction is a dynamic routing protocol instruction (e.g., page 4).

15. Referring to claim 15, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein each said black-holing router provides said internet traffic, routed toward said black-hole router, to a next-hop black-holing router (e.g., page 7).

16. Referring to claim 16, Chesla discloses the claimed limitations rejected as above. Chesla also discloses changing the number of said first number of routers and said second number of routers in real-time (e.g., page 6).

17. Referring to claim 17, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein the route to said black-hole router having said first IP address has a preference higher than a preference for the route to said internet application having said first IP address (e.g., page 5).

18. Referring to claim 18, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein said steps of routing internet traffic on the router to said black-hole router is consistent routing (e.g., page 4).

19. Referring to claim 19, Chesla discloses the claimed limitations rejected as above. Chesla also discloses wherein consistent routing requires that a black- holing router in said ISP network routes traffic having said first IP address to other black- holing routers and wherein non-black- holing router routes said first IP address to other non- black-holing routers (e.g., page 5).

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chesla in view of "Official Notice".

22. Referring to claims 2 and 14, Chesla does not specifically mention about Border Gateway Protocol. "Official Notice" is taken that both the concept and advantages of providing Border Gateway Protocol is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Border Gateway Protocol

with the teachings of Chesla in order to facilitate usage of the protocol because it would support filtering information passing through the router. The Border gateway protocol being a dynamic routing protocol would support filtering packets during routing at a router.

23. Claims 1, 3-6, 8-13, 15-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Nguyen, 2003/0172145 (Hereinafter Nguyen).

24. Referring to claim 1, Nguyen discloses an internet service provider (ISP) network (e.g., page 6) comprising: a plurality of routers connected to provide an internet protocol network (IP) (e.g., page 6); a first router, of said plurality of routers, in communication with an internet application, said internet application having a first IP address (e.g., page 6); a black-hole router in communication with said plurality of routers, said black-hole router configured to have a bogus IP address that is same as said first IP address, said bogus IP address having a preference higher than a preference for first IP address (e.g., page 7); wherein either one of said plurality of routers or said black-hole router is configured to inject a black-hole route scheme into a dynamic routing protocol used by said ISP network such that selected ones of said plurality of routers route traffic to said bogus address of said black-hole router (e.g., page 7).

25. Referring to claim 3, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said black-hole route is injected when said internet application is under a Distributed Denial of Service (DDoS) attack (e.g., page 8).



26. Referring to claim 4, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said selected ones of said plurality of routers route traffic to said bogus address via a consistent scheme (e.g., page 7).

27. Referring to claim 5, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said selected ones of said plurality of routers can be changed in real-time by injecting a new black-hole route scheme into said dynamic routing protocol (e.g., page 7).

28. Referring to claim 6, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses an internet service provider (ISP) network (e.g., page 6 ) comprising: a first router in communication with said ISP network (e.g., page 6); an internet application, having a first IP address, in communication with said first router, said first router directing internet traffic to said first IP address of said internet application (e.g., page 6); and a second router, configured to be a black-hole router, in communication with said ISP network, said second router configured to receive internet traffic that was originally addressed to said first IP address (e.g., page 7), but was re-routed through a number of predetermined routers within said ISP network, said predetermined routers being less than all the routers in said ISP network (e.g., page 7).

29. Referring to claim 8, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said internet traffic originally addressed to said first IP address, but

rerouted through a number of predetermined routers comprises both attack traffic and legitimate traffic (e.g., page 8).

30. Referring to claim 9, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said attack traffic comprises at least one of PING and SYN messages (e.g., page 8).

31. Referring to claim 10, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said internet traffic addressed to said first IP address, but rerouted through a number of predetermined routers comprises both attack traffic and legitimate traffic (e.g., page 7).

32. Referring to claim 11, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses wherein said predetermined routers create consistent routing to said second router (e.g., page 6).

33. Referring to claim 12, Nguyen discloses the claimed limitations rejected as above. Nguyen also discloses a method of black-holing internet traffic in an ISP network (e.g., page 6), said method comprising: injecting, by a first router, an instruction into said ISP network (e.g., page 6); responding to said instruction, by a plurality of routers within said ISP network, such that a first number of routers become black-holing routers and a second number of routers become non-black-holing routers (e.g., page 7); routing internet traffic addressed for a first IP

address, by said non-black-holing routers, to an internet application having said first IP address (e.g., page 7); and routing internet traffic addressed for said first IP address, by said black-holing routers, to a black-hole router having said first IP address (e.g., page 7).

34. Referring to claim 13, Nguyen discloses the claimed limitations rejected as above.

Nguyen also discloses wherein said instruction is a dynamic routing protocol instruction (e.g., page 8).

35. Referring to claim 15, Nguyen discloses the claimed limitations rejected as above.

Nguyen also discloses wherein each said black-holing router provides said internet traffic, routed toward said black-hole router, to a next-hop black-holing router (e.g., page 8).

36. Referring to claim 16, Nguyen discloses the claimed limitations rejected as above.

Nguyen also discloses changing the number of said first number of routers and said second number of routers in real-time (e.g., page 7).

37. Referring to claim 17, Nguyen discloses the claimed limitations rejected as above.

Nguyen also discloses wherein the route to said black-hole router having said first IP address has a preference higher than a preference for the route to said internet application having said first IP address (e.g., page 6).

38. Referring to claim 18, Nguyen discloses the claimed limitations rejected as above.

Nguyen also discloses wherein said steps of routing internet traffic on the router to said black-hole router is consistent routing (e.g., page 6).

39. Referring to claim 19, Nguyen discloses the claimed limitations rejected as above.

Nguyen also discloses wherein consistent routing requires that a black-holing router in said ISP network routes traffic having said first IP address to other black-holing routers and wherein non-black-holing router routes said first IP address to other non-black-holing routers (e.g., page 7).

40. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen in view of "Official Notice".

41. Referring to claims 2 and 14, Nguyen does not specifically mention about Border Gateway Protocol. "Official Notice" is taken that both the concept and advantages of providing Border Gateway Protocol is well known and expected in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Border Gateway Protocol with the teachings of Nguyen in order to facilitate usage of the protocol because it would support filtering information passing through the router. The Border gateway protocol being a dynamic routing protocol would support filtering packets during routing at a router.

***Response to Arguments***

42. Applicant's arguments filed 1/28/2008 regarding the rejected claims in this office action, have been fully considered but they are not persuasive. Therefore, rejection of the above rejected claims is maintained.

43. Regarding the applicant's concern for the claimed limitations of claim 1, Briefly, Chesla discloses a method for protecting a network from an attack by measuring a property of traffic entering the network, and analyzing the property using at least one fuzzy logic algorithm in order to detect the attack. (Abstract), ..., Paragraphs [0050] through [0052] of Chesla, along with the rest of Chesla's page 4, are directed to applying fuzzy logic to a characteristic or property of traffic. Page 4 of Chesla does not, however, disclose an IP address of one of Chesla's routers being same as another router., ..., Page 4 of Chesla does not disclose the selective routing of traffic to a black-hole router. Specifically (and like Donaghey), Chesla does not disclose "selected ones of said plurality of routers route traffic to said bogus address of said black-hole router", ....., Nguyen discloses a system and method for developing and implementing ISP architectures. One embodiment of a method for designing and implementing ISP architectures may include formulating a set of design requirements for an ISP architecture, establishing an architectural model for the ISP architecture using the set of design requirements, generating a logical design for the ISP architecture from the architectural model and the set of design requirements, and generating a physical design for the ISP architecture using the architectural model and the logical design. One embodiment may also include selecting one or more components of the ISP architecture and implementing the ISP architecture according to the logical design and the physical design. In one embodiment the system and method for designing, developing and implementing ISP architectures may be used to design, develop and implement

an N-tiered ISP architecture. (Abstract). Nguyen discloses this limitation at page 7. Page 7 of Nguyen includes paragraphs about "Designing, Developing, and Implementing ISP Architectures". Page 7 of Nguyen does not, however, disclose the above limitation,..., Dependent claims 5 and 16 relate to changing the selected ones of the plurality of routers in real-time by injecting a new black-hole route scheme into the dynamic routing protocol. The Office Action states that Chesla discloses this limitation on page 4 and page 6. Neither of these pages of Chesla, however, disclose the limitation claimed in dependent claims 5 and 16. The Office Action also states that Nguyen discloses this limitation at page 7. Page 7 of Nguyen does not disclose this limitation ; the examiner respectfully disagrees.

The disclosure and the teachings of the neither Chesla nor Nguyen references are limited as concluded by the applicant. Applicant relied upon abstract and missed the relevant content of the cited arts. Please see the cited content of the provided portions, which is not limited as concluded by the applicant. Both Chesla and Nguyen disclose the broadly claimed limitations as rejected above, i.e., please see the cited portions among other places of the cited art that not only contain the applicant concerned content of the art but also the relied upon limitations. The specification of the application under prosecution at page 15, states, Embodiments of the present invention and obvious variations thereof are contemplated as falling within the spirit and scope of the claimed invention, which is set forth in the following claims. Further, when reviewing a reference the applicants should remember that not only the specific teachings of a reference but also reasonable inferences which the artisan would have logically drawn therefrom may be properly evaluated in formulating a rejection. **In re Preda, 401 F. 2d 825, 159 USPQ 342 (CCPA 1968) and In re Shepard, 319 F. 2d 194, 138 USPQ 148 (CCPA**

1963). Skill in the art is presumed. **In re Sovish**, 769 F. 2d 738, 226 USPQ 771 (Fed. Cir. 1985). Every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. **In re Bode**, 550 F. 2d 656, 193 USPQ 12 (CCPA 1977).

*Allowable Subject Matter*

44. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

45. In order to expedite the prosecution of this case, multiple references are used for the rejections of the rejected claims to demonstrate that several references disclose the claimed subject matter of the claims.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Examiner has cited particular columns and line numbers and/or paragraphs and/or sections and/or page numbers in the reference(s) as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety, as potentially teaching, all or part of the claimed invention, as well as the context of the passage, as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Haresh Patel whose telephone number is (571) 272-3973. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday from 10:00 am to 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached at (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Haresh N. Patel/

Primary Examiner, Art Unit 2154

4/27/2008